

## Summary

BPMN has been broadly adopted as a graphical notation for business process modeling. It is used by humans to design, visualize, and manage business processes ranging from workflows to automated business processes. This document briefly discusses the scope of the upcoming 2.0 version of the OMG standard and what compliance with BPMN 2.0 involves.

**Author(s):** Ivana Trickovic

**Company:** SAP AG

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## Author Bio

Ivana Trickovic is a standards architect in SAP's Standards Management and Strategy group. Her work focuses on technology standards concerning the area of business process management and SOA. She has represented SAP in several standards efforts including OASIS WS-BPEL TC and OASIS BPEL4People TC.

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## Introduction

BPMN has been broadly adopted as a graphical notation for business process modeling. It is used by humans to design, visualize, and manage business processes ranging from workflows to automated business processes. Because of its simplicity, it has been used by IT people as well as business people.

The latest work on BPMN, called BPMN 2.0, extends the OMG standard<sup>1</sup> in a number of ways. It introduces a notation for collaboration processes (aka choreographies), refines existing elements and introduces interchange formats, for process definitions as well as diagram layout. In addition, it formalizes the execution semantics of BPMN elements.

In the context of the BPMN 2.0 work, whose scope is defined by the [OMG BPMN 2.0 RFP](#), the abbreviation stands for *Business Process Model and Notation*. The name has been changed as the scope of this new work is broader than the scope of BPMN 1.1, but it preserves the *BPMN brand*.

The following sections explain the scope of BPMN 2.0 and discuss compliance with it.

## Scope of BPMN 2.0

BPMN is a modeling language specifically for designing various flavors of business processes. As such it introduces some modeling constructs that are specific to the process modeling domain, such as compensation activities, human-user interactions, interrupting and non-interrupting events, etc. These constructs are not covered by more general modeling languages that are typically compared with BPMN, such as UML Activity diagram.

BPMN 2.0 is based on BPMN 1.1 and extends its current capabilities. It introduces a metamodel and notation for choreographies. It refines elements that were already available in BPMN 1.1, such as human-user interactions and events, and resolves known inconsistencies and ambiguities. It introduces interchange formats, for process definitions as well as diagram layouts. Finally, it formalizes the execution semantics of BPMN elements, which makes it possible to interpret BPMN process models unambiguously.

The scope of BPMN 2.0 encompasses the following new features:

- **Notation:** Extends the existing set of graphical elements with elements for new event types, human-user interactions and choreography activities.
- **Semantic model:** Introduces a MOF-based metamodel that defines the abstract syntax and semantics of the modeling constructs. The metamodel is used to derive the interchange format for BPMN processes and choreographies.
- **Visual model:** Introduces a MOF-based metamodel that defines the diagram syntax. It contains a set of concepts needed to represent BPMN diagrams, persist and interchange them. The metamodel is used to derive the interchange format for diagram layout.
- **Formalization of execution semantics:** Precisely defines execution semantics for all BPMN elements to ensure unambiguous interpretation of BPMN process models. This facilitates portability of BPMN processes among various process execution environments.
- **Interchange format:** Introduces XMI-based and non-XMI-based formats that facilitate exchange of business process models and their diagram layouts among process modeling tools.

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<sup>1</sup> Business Process Modeling Notation (BPMN) 1.1, OMG, January 2008, <http://www.omg.org/spec/BPMN/1.1/>

- **Choreography:** Introduces the ability to model business contracts (a set of messages and the order in which they can be exchanged) among multiple partners and discusses how a business contract is enforced with respect to the individual behavior of partners.
- **Diagrams:** Supports different diagram types and different views showing process orchestrations, collaborations and choreographies independently or as integrated models. This allows end-users to focus on specific concerns.
- **Alignment with BPDM:** While the OMG's Business Process Definition Metamodel (BPDM) has been designed as a general process metamodel for semantic integration that can be mapped to multiple process languages, the BPMN 2.0 metamodel formalizes and extends the implicit metamodel of BPMN 1.1. The proposal is to keep the BPMN metamodel independent from the BPDM metamodel, and to define a mapping between the two.
- **Alignment with other standards, e.g. WS-BPEL:** Provides an optional mapping of a BPMN subset to WS-BPEL to illustrate alignment with the execution semantics of WS-BPEL. This mapping will be restricted to BPMN block-structured flows without cycles. It shows that these BPMN processes can also be executed in WS-BPEL-based execution environments.

## Compliance with BPMN 2.0

BPMN 2.0 addresses different scenarios, including modeling of business processes, exchange of process definitions and process execution. It is not expected that all tools will support both modeling and execution of business processes. Also some tools may offer modeling of process orchestrations and not choreographies, or vice versa. In order to address these scenarios, different compliance points are being introduced.

Process modeling tools will support drawing of process diagrams and simple collaboration diagrams, which do not include choreography elements. This assumes the support of BPMN graphical elements for processes and collaborations, the connections between various graphical elements, and the underlying semantic model, i.e. the BPMN metamodel. Process modeling tools will support exchange of diagram layouts, and definitions of processes and simple collaboration.

Process execution environments will support the BPMN semantics and the underlying semantic model in order to execute BPMN processes as defined. They will also support exchange of process definitions.

Choreography modeling tools will support drawing of choreography diagrams and more complex collaboration diagrams, which may include choreography elements. This assumes support of BPMN graphical elements for choreographies and collaborations, the connections between various graphical elements, and the underlying semantic model. Choreography modeling tools will support exchange of diagram layouts, and definitions of choreographies and collaborations.

## Related Content

[Standards on SDN](#)

[Process Definition Languages on SDN](#)

[Web Services Business Process Execution Language \(WS-BPEL\) on SDN](#)

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